



EXHIBIT A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
Walter Baechtiger)
Serial No.: 10/699,107) Examiner: Sterrett, Jonathan G.
Filed: October 31, 2003)
For: **Network Branch Placement Tool**) Art Unit: 3623

DECLARATION UNDER 37 C.F.R. § 132

I, Walter Baechtiger, am the sole inventor in U.S. Patent Application No. 10/699,107 (the “Application”). This declaration is being submitted in response to a non-final office action rejecting claims 1-24 of the Application.

I understand that the claims were rejected under 35 U.S.C. § 103(a), as potentially being obvious in view of Shmoys, et al., “Approximation algorithms for facility location problems,” 1997 Proceedings of the twenty-ninth annual ACM symposium on Theory of computing, El Paso, Texas, United States, pages 265-274(1-21)(hereinafter “Shmoys”).

I have reviewed the Office Action issued by the U.S. Patent & Trademark Office on February 13, 2008. In support of all current rejections, the Examiner relies upon the Shmoys reference. The Examiner seems to equate and analogize the fractional mutational / linear relaxation approach disclosed in Shmoys, with the application of a genetic algorithm as required by claims 12-24 of the Application. For the reasons provided below, and those provided in the Amendment & Response to Office Action filed herewith, I do not believe that such a comparison is appropriate.

* * *

A purely mutational approach leaves out the steps of cross-over. Shmoys discloses the use of a mutational approach, often referred to as linear relaxation. As its name implies, “linear relaxation” is a linear approach that is suitable for solving linear problems - and finding solutions within a linear solution space. However, by omitting the step of selection and cross-over as used by genetic algorithms, Shmoys’ approach is very limited in its solution finding capabilities.

In contrast, genetic algorithms provide substantially more optimization capabilities. In fact, genetic algorithms are one of the only approaches that are capable of addressing class NP problems (*i.e.*, problems that can not be solved mathematically through solving equations).

Shmoys’ approach of using linear relaxation may work in conjunction with the algorithms disclosed therein because it discloses using mere “distance” or “geometric distance,” rather than “travel time,” in order to derive the cost associated with a facility. When considering only “distance” or “geometric distance” (*i.e.*, the distance between two geographical points, which does not take into account road directions, road availability, driving speeds, barriers, etc.), a small change of a service provider location results in a linear and equally small change in distance to a service receiver. However, when considering “travel time” (as required in the present invention), a small change of a service provider location can suddenly place a location across a river, within a detoured section of a road, on the other side of a highway (thereby decreasing accessibility and increasing driving (travel) time for a population of receivers on the other side of the highway), etc. In other words, even a small change in distance may have a dramatic impact on travel time and, therefore, the value of a branch location. In order to properly

consider “travel time,” as required by my invention, a genetic algorithm is preferred. In contrast, the linear relaxation methods disclosed in Shmoys would not work and, in fact, are completely inapposite.

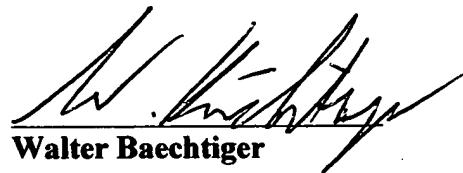
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With respect to claim 18, the Examiner mentions that any algorithm needs to be stopped, and compares the requirement to stop a genetic algorithm to the fact that, with a linear relaxation method, the solution converts to a 3G close integer solution. Again, this notion of comparing one part of a first algorithm (linear relaxation) to a part of another algorithm (*i.e.*, a genetic algorithm) is inappropriate. Comparing a stop criterion of a linear relaxation algorithm to a stop criterion of a genetic algorithm is akin to comparing the wheel of a carriage with the steering wheel of a sports car. Although both are round, they serve completely different functions.

In the case of a genetic algorithm, the reason for utilizing a stop criterion is not primarily to stop an infinite loop when a solution has converged to a number (as the Examiner suggests). (Office Action, p. 10). Rather, a stop criterion is desirably used with a genetic algorithm in the present invention to limit computing time - especially in view of the extremely computing-intensive travel time calculations required by the present invention. For example, in application, a business may need to identify a branch location within a limited and defined period of time. Since a genetic algorithm tends to achieve better results the longer it runs, the invention provides that the genetic algorithm is preferably running for the duration of time permitted by the business placing the branch - not necessarily when a solution has converged to a number (as the Examiner suggests). (Office Action, p. 10).

I, Walter Baechtiger, hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully Submitted,



The image shows a handwritten signature in black ink, appearing to read "Walter Baechtiger". It is written in a cursive style with some vertical strokes and loops.

May 27th , 2008
Date